



THE ARMY FOOD ADVISOR EQUIPMENT INNOVATION AWARD

Design Team: SSG Sheldon Tate

CW2 Edgar Walle

CW2 Bill Wencil

CW3 Jeff Lein



Design/Fabrication Team Composition



CW2 Edgar Walle, assigned to 508th Parachute Infantry Regiment, 4th BCT, 82nd ABN DIV, currently serves as the Brigade Combat Team Food Advisor. CW2 Walle is responsible for the original design idea to conduct an MWO on existing KCLFF's to provide a broader spectrum of cooking capabilities to support a massive field feeding mission in the Kandahar Province. This original design was adopted by TF Raider and improved to what you see today. CW2 Walle is the lead designer and innovating drive behind this team.



CW2 William Wencil, assigned to 508th Parachute Infantry Regiment, 4th BCT, 82nd ABN DIV currently serves as the Brigade Allied Trade Tech. CW2 Wencil is solely responsible for the fabrication of the SK. CW2 Wencil is also responsible for the design of the propane burners and dishwashing sinks / drying racks.



Design/Fabrication Team Composition



SSG Sheldon Tate, was assigned to the 1/508th Parachute Infantry Regiment, 4th BCT, 82nd ABN DIV during his tour in OEF. SSG Tate was responsible for developing and ordering a component listing for the SK. In addition, SSG Tate operated the SK on a remote site in the Kandahar Province which provided testing results for the new improvements on the 2011 SK. SSG Tate was killed July 13, 2010 while repelling an insurgent attack on an Afghan police compound in Kandahar City.



CW3 Jeff Lein, assigned to the U.S. Army Special Forces Command (Airborne), currently serves as the Regimental (Division) Food Advisor. CW3 Lein is responsible for augmenting the design to provide multi-fuel (propane/diesel) and dishwashing capabilities.

EXISTING OEF FFE



- The MKT, CK, and Field Sanitation Center are too bulky for the smaller missions. Smaller COP's, Firebases, FOB's require low signature cooking platforms.
- The KCLFF & Assault Kitchen do not provide sanitation.
- The Assault Kitchen is equipped to prepare UGR-H&S rations only.



THE SPARTAN KITCHEN in 2010





Evolution of the Spartan Kitchen (SK)

- The Spartan Kitchen (SK) was designed to provide the same field feeding capabilities as the Kitchen Company Level Field Feeding (KCLFF); but for smaller headcounts of 50 or less with more cooking capabilities to include sanitation.
- The command allowed us to conduct a modification work order to existing KCLFF's to leverage FFE shortages and support field feeding for an upcoming mission.
- Throughout OEF X the KCLFFs have been critically short in supply; areas in RC W/S have operated with FFE shortages.
- The KCLFF has not evolved to adapt to the modern UGR-A rations, which have been manufactured for efficiency. The development of the SK provides more capabilities than the KCLFF with less equipment in smaller, austere locations.
- The KCLFF has not evolved to provide sanitation/dishwashing capabilities without augmenting the use a bulky field sanitation center w/tent.
- The SK units will provide dishwashing/sanitation, grilling, sautéing, boiling, and baking capabilities to the TF Fury COP's, CP's, and Firebases or locations with 50 or less.
- The SK is designed to support an A-M-A menu cycle with 1 x 92G, 1 x ISU-96, potable water supply, power source, and diesel/propane fuel supply.



- THE SK WILL INCLUDE A FABRICATED STAND TO HOLD THE STANDARD MKT GRIDDLE.
- WHEN THE MEAL PREPARATION IS COMPLETE, REMOVE THE GRIDDLE TOP (2 MAN LIFT) AND PLACE ON THE DRYING RACK TO SANITIZE





- THE SK WILL INCLUDE 3 X LARGE FABRICATED SANITATION SINKS
- THE SANITATION SINKS WILL FIT ON THE GRIDDLE STAND AFTER THE GRIDDLE IS NO LONGER IN USE.
- FILL EACH SINK $\frac{3}{4}$ FULL AND TURN ON MBU'S
- LET THE WATER IN THE FIRST SINK (WASH SINK) HEAT UP UNTIL IT REACHES 110 DEGREES F AND ADD SOAP.
- LET THE WATER IN THE SECOND SINK (RINSE SINK) HEAT UP UNTIL IT REACHES 170 DEGREES F. SUBMERSE EACH ITEM FOR 30 SECONDS.





- WHEN DISHWASHING/SANITATION IS COMPLETE, SIMPLY TURN THE SINKS ON THEIR SIDES AND EMPTY THE WATER.
- THE GREY WATER WASTE CAN BE DUMPED INTO A LARGE POT OR CONTAINER AND EMPTIED INTO A DESIGNATED LOCATION ON THE CP.





- THE SK WILL INCLUDE A FABRICATED SERVING/DRYING RACK
- DURING THE SERVING PERIOD, THIS RACK WILL SUPPORT 3 X MERMITE CONTAINERS FOR HOT A-RATIONS AND 2 X JUICE CONTAINERS FOR JUICE AND COFFEE.





- THE DRYING/SERVING RACK CAN ALSO BE USED TO COOK ON. THE RACK CAN SUPPORT 3 X MBU'S AND 2 X FULL 15 GAL POTS FOR COOKING.
- THE RACK WILL HOLD 15 GAL POTS PROVIDING BOILING CAPABILITIES, SQUARE HEAD POTS FOR FRYING, GRILLING, AND SAUTEING CAPABILITIES





- THE SK WILL INCLUDE 1 X LARGE CAMBRO ICE CUDDY COOLER.
- ICE IN THE COOLER WILL PROVIDE THE SK WITH A REFRIGERATED BEVERAGE CENTER





- THE M59 WILL PROVIDE THE SK WITH BAKING, BOILING, STEAMING, GRILLING, AND SAUTEING CAPABILITIES.





- THE SK WILL REQUIRE POWER GENERATION TO OPERATE THE MBU (v3) HEAT SOURCE.
- EACH SK WILL REQUIRE 1 X MBU POWER CONVERTER AND 3 X MBU 1000V SHORT CORDS TO OPERATE.





THE SPARTAN KITCHEN in 2011





THE NEW 2011 SPARTAN KITCHEN

Previous Model



- Previous 2-compartment sink from 2010 SK model. The 2-compartment sink was fabricated as a result of critically short supplies of metal during OEF X. To meet the fabrication timeline and provide dishwashing capabilities, our team decided to proceed with 2 sinks to support the mission.

New Model



- Modified SK with 3-compartment sink for wash/rinse/final rinse.
- Recommend fabricating the stand legs shorter for ergonomic benefits.
- Recommend adding sink drains with plugs and hoses.



THE NEW 2011 SPARTAN KITCHEN

Previous Model



- Previous model served as a drying/cooking rack with 2 MBU's

New Model



- Modified to cook with 3 x MBU's with larger cooking & drying surface.



THE NEW 2011 SPARTAN KITCHEN

Previous Model



- Previous model supported only 2 x mermite containers.

New Model



- Modified to support beverages and additional mermite containers during meal service period. Also provides more surface area for drying dishes.



THE NEW 2011 SPARTAN KITCHEN

Previous Model



- Previous model was designed for MBU's operating on power generation.

New Model



- New model supports multi fuel (diesel/propane) for situations when the power generation fails or Class III is critically low. The new propane burner are the same size as the MBU.



Our Teams Design Approach

- The new Battlefield Kitchen (BK) is designed to work in these environments and break down into mobile platforms; however this equipment is not scheduled to be fielded until FY13/14.
- There are approximately 3,500 MKT's in the army's inventory, only 410 are TPE in OEF resulting in severe FFE shortages.
- The 2011 COIN strategy requires more outposts and firebases operating in the villages inside the local districts.
- To best cost effective and timely method to leverage these shortages is to use the army's excess and OEF TPE KCLFF's to conduct an equipment Modification Work Order (MWO) providing a broader spectrum of cooking/sanitation capabilities.
- The MWO would be the quickest viable option to rapidly equip the force in the interim prior to a massive fielding of the new BK.
- The improvements provided by the MWO on the KCLFF's will provide the additional equipment and cooking/sanitation capabilities required in the smaller 50 man austere locations.



MWO Materials list

- 4-1.5 Aluminum square tubing 38" long (legs for stand)
- 4-2" Aluminum angle 23" long (sides of frames)
- 4-2" Aluminum angle 43" long (front & back of frames)
- Used 7075-T6 Aluminum or Food Grade Stainless Steel



Equipment List for Spartan Kitchen

<u>ITEM/DESCRIPTION</u>	<u>NSN</u>	<u>AMOUNT</u>
• GRIDDLE ASSY	7310-01-043-5404	1
• M-59A FIELD RANGE OUTFIT	7360-01-479-0312	1
• MERMITE FOOD CONTAINER	7360-01-419-6261	3
• DISPENSER, LIQUID, INSULATED 5 GL	7310-01-245-6937	2
• 5 GAL PLASTIC FUEL CANS	7240-01-3375268	2
• 5 GAL PLASTIC WATER CANS	7240-00-089-3827	3
• MBU (v3)	7310-01-502-9455	3
• 33 GAL TRASH CAN W/ LID	7310-01-443-6321	1
• MBU POWER CONVERTER	7310-01-502-9455	1
• MBU SHORT POWER CORD (2 BRANCH)	7310-01-455-1206	2
• SPARTAN GRIDDLE/SINK STAND	N/A	1
• SPARTAN DRYING/SERVING RACK	N/A	1
• 2KW GENERATOR	6115-01-507-9310	1
• CAMBRO ICE CADDY	GOV20002131	1
• SPARTAN SANITATION SINKS	N/A	2
• COOKING POT CRADLE ASSY	7330-10-248-9964	1
• COVER, COOKING POT	7330-00-250-6300	2
• FIRE EXTINGUISHER	4220-00-270-4512	1

A full-page photograph of a soldier in camouflage combat uniform, wearing a helmet with a night vision device and a microphone. He is holding an M4-style assault rifle. An American flag patch is visible on his right sleeve. The background is a blurred outdoor setting with other soldiers in the distance. The word "QUESTIONS?" is superimposed in the center in a large, bold, orange, sans-serif font.

QUESTIONS ?